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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (canceled).

Claim 2 (currently amended): The device of claim ~~1~~ 8 wherein the sensors comprise a first and a second temperature detector, wherein the temperature detectors are arranged beside the ~~heating~~ heater and wherein the measured quantities tl and t2 are derived from signals of the two temperature detectors.

Claim 3 (currently amended): The device of claim 2 wherein, as seen in a flow direction of the fluid, the first temperature detector is arranged before the ~~heating~~ heater and the second temperature detector is arranged after the ~~heating~~ heater.

Claim 4 (original): The device of claim 3 wherein the measured quantity t2 corresponds to the fluid temperature at the second temperature detector.

Claim 5 (original): The device of claim 2, wherein the measured quantity tl corresponds to a difference between the fluid temperatures at the two temperature detectors.

Claim 6 currently amended): The device of claim ~~1~~ 8 further comprising a fluid temperature detector arranged outside an area of influence of said ~~heating~~ heater, wherein the processing circuit is designed for using a signal from the fluid temperature detector when determining the material parameter k and/or the flow m.

Claim 7 (currently amended): The device of claim ~~1~~ 8 further comprising a semiconductor chip, wherein the ~~heating~~ heater and the sensors are integrated on the semiconductor chip.

Claim 8 (currently amended): ~~The device of claim 1 wherein the fluid is a mixture of at least to substances and wherein the material parameter k is indicative of a mixing ratio between the two substances.~~

A device for measuring the flow m of a fluid of at least two substances and a mixing ratio k between the two substances of the fluid, said device comprising

a heater for generating, in said fluid, a region having non-homogeneous temperature,

several sensors for determining at least two measured quantities tl, t2 depending on fluid temperatures in a range of influence of the heater, wherein the measured quantities are different functions tl = fl(m, k) and t2 = f2(m, k) of the flow m and the mixing ratio k, and

a processing circuit for determining the flow m and the mixing ratio k from the measured quantities tl, t2.

Claim 9 (currently amended): ~~the~~ The device of claim ~~1~~ 5 wherein the material parameter k is the thermal .conductivity of the fluid.

Claim 10 (currently amended): The device of claim ~~1~~ 8 comprising exactly one ~~heating~~ heater.

Claim 11 (currently amended): An apparatus for mixing at least two fluids with different thermal conductivities and comprising at least one device for measuring a mixing ratio k of the two fluids and a flow m of the mixed fluids, said device comprising

a ~~heating~~ heater for generating, in said fluid, a region having non-homogeneous temperature,

several sensors arranged in said region for determining at least two measured quantities tl, t2 depending on fluid temperatures in a range of influence of the ~~heating~~ heater, wherein the measured quantities are different functions tl = f1(m, k) and t2 = f2(m, k) of the flow m and the mixing ratio k, and

a processing circuit for determining the flow m and the mixing ratio k from the measured quantities tl, t2.

Claim 12 (original): The apparatus of claim 11 comprising a control unit for monitoring and/or regulating the mixing ratio.

Claim 13 (currently amended): ~~The~~ An apparatus ~~of claim 11 adapted~~ for mixing at least three fluids with different thermal conductivities and comprising at least two devices for measuring a mixing ratio k of the three fluids and a flow m of the mixed fluids, said apparatus comprising

a first mixing unit for mixing a first and a second of the fluids into a first mixture [[,]] and

a second mixing unit for mixing the first mixture and a third of the fluids into a second mixture, ~~and~~

~~at least two of said devices for measuring a mixing ratio k of the two fluids and a flow m of the mixed fluid~~ wherein, as seen in a flow direction of the fluids, a first of said devices is arranged between the first and the second mixing unit and a second of said devices is arranged after the second mixing unit [[-]], and wherein each of said devices comprises

a heater for generating, in said fluid, a region having non-homogeneous temperature,

several sensors arranged in said region for determining at least two measured quantities tl, t2 depending on fluid temperatures in a range of influence of the heater, wherein the measured quantities are different functions tl = f1(m, k) and t2 = f2(m, k) of the flow m and the mixing ratio k, and

a processing means for determining the flow m and the mixing ratio k from the measured quantities tl, t2.

Claim 14 (currently amended): An apparatus for mixing at least two fluids with

different thermal conductivities, said apparatus comprising at least one device of claim ~~1~~ 8.

Claim 15 (currently amended): A method for measuring a flow m of a fluid and a material parameter k depending on a composition of the fluid, wherein the fluid is a mixture of a first and a second material and the material parameter k indicative of a mixing ratio between the materials, said method comprising the steps of

bringing said fluid into contact with a ~~heating~~ heater for generating ~~an~~ a region having non-homogeneous temperature in said fluid,

determining at least two measured quantities tl, t2 depending on fluid temperatures in a range of influence of the ~~heating~~ heater, wherein the measured quantities are different functions tl = f1(m, k) and t2 = f2(m, k) of the flow m and the material parameter k, and

determining the flow m and the material parameter k from the measured quantities tl, t2.

Claim 16 (canceled).

Claim 17 (currently amended): The method of claim ~~16~~ 15 further comprising the step of monitoring or regulating the mixing ratio using the material parameter k.

Claim 18 (original): The method of claim 15 wherein the mixture is fed to a burner and the material parameter k is used for controlling or monitoring the burner.

Claim19 (original): The method of claim 15 wherein the mixture is fed to a fuel cell and the material parameter k is used for controlling or monitoring the fuel cell.

Claim 20 (new): A device for measuring the flow m and at least one material parameter k of a fluid, wherein the material parameter k depends on a thermal conductivity of the fluid, said device comprising

a heater for generating, in said fluid, a region having non-homogeneous temperature,

a first and a second temperature detector arranged in said region for determining at least two measured quantities tl, t2 depending on fluid temperatures, wherein, as seen in a flow direction of the fluid, the first temperature detector is arranged before the heater and the second temperature detector is arranged after the heater,

wherein the measured quantities are different functions tl = f1(m, k) and t2 = f2(m, k) of the flow m and the material parameter k,

wherein the measured quantity tl corresponds to a difference between the fluid temperatures at the first and the second temperature detectors and

wherein the measured quantity t2 corresponds to the fluid temperature at the second temperature detector,

said device further comprising a processing circuit for determining the flow m and the material parameter k from the measured quantities tl, t2.